



\*\*FILE\*\*ID\*\*RPGDIVIDE

RRRRRRRR	PPPPPPPP	GGGGGGGG	DDDDDDDD	IIIIIIII	VV	VV	IIIIIIII	DDDDDDDD	EEEEEEEEE	
RRRRRRRR	PPPPPPPP	GGGGGGGG	DDDDDDDD	IIIIIIII	VV	VV	IIIIIIII	DDDDDDDD	EEEEEEEEE	
RR RR	PP PP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RR RR	PP PP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RR RR	PP PP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RR RR	PP PP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RRRRRRRR	PPPPPPPP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RRRRRRRR	PPPPPPPP	GG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE	
RR RR	PP	GG	GG GGGGGG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE
RR RR	PP	GG	GG GGGGGG	DD DD	IIIIIIII	VV	VV	IIIIIIII	DD DD	EE
RR RR	PP	GG	GG GG	DD DD	IIIIIIII	VV VV	VV	IIIIIIII	DD DD	EE
RR RR	PP	GG	GG GG	DD DD	IIIIIIII	VV VV	VV	IIIIIIII	DD DD	EE
RR RR	PP	GG	GG GGGGGG	DDDDDDDD	IIIIIIII	VV VV	VV	IIIIIIII	DDDDDDDD	EEEEEEEEE
RR RR	PP	GG	GG GGGGGG	DDDDDDDD	IIIIIIII	VV VV	VV	IIIIIIII	DDDDDDDD	EEEEEEEEE
LL	IIIIIIII	SSSSSSSS								
LL	IIIIIIII	SSSSSSSS								
LL	IIIIIIII	SS								
LL	IIIIIIII	SS								
LL	IIIIIIII	SS								
LL	IIIIIIII	SSSSSS								
LL	IIIIIIII	SSSSSS								
LL	IIIIIIII	SS								
LL	IIIIIIII	SS								
LLLLLLLL	IIIIIIII	SSSSSSSS								
LLLLLLLL	IIIIIIII	SSSSSSSS								

```
1 0001 0 MODULE RPGSDIVIDE(IDENT='1-003')=
2 0002 1 BEGIN
3 0003 1
4 0004 1
5 0005 1 ****
6 0006 1 *
7 0007 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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24 0024 1 *
25 0025 1 *
26 0026 1 ****
27 0027 1
28 0028 1
29 0029 1 ++
30 0030 1
31 0031 1 FACILITY: RPGII SUPPORT
32 0032 1
33 0033 1 ABSTRACT:
34 0034 1
35 0035 1 This module supports RPG divides over 31 packed digits
36 0036 1
37 0037 1 ENVIRONMENT: VAX/VMS user mode
38 0038 1
39 0039 1 AUTHOR: Shelly T. Solomon, CREATION DATE: 15-Jul-1983
40 0040 1
41 0041 1 MODIFIED BY:
42 0042 1
43 0043 1 1-001 Original. STS 15-Jul-1983
44 0044 1 1-002 Pass scale-data to PLI$DIV_PK_SHRT. STS 02-Nov-1983
45 0045 1 1-003 Change reference to PLI$ routine to OTSS routine. DG 05-Mar-1984
46 0046 1 --
47 0047 1
48 0048 1 REQUIRE 'RTLIN:RPGPROLOG'; ! switches, psects, macros,
49 0113 1 ! linkages and LIBRARYs
50 0114 1
51 0115 1 ++
52 0116 1 TABLE OF CONTENTS
53 0117 1 -
54 0118 1
55 0119 1 FORWARD ROUTINE
56 0120 1 RPG$DIV_LONG : NOVALUE;
57 0121 1
```

```
58      0122 1  |+ EXTERNAL REFERENCES
59      0123 1  |-_
60      0124 1
61      0125 1
62      0126 1  EXTERNAL ROUTINE
63          0127 1    OTSSDIV_PKSHORT;
64          0128 1
65          0129 1  BUILTIN
66          0130 1    ASHP;
67          0131 1
```

```
69      0132 1 GLOBAL ROUTINE RPG$DIV_LONG(
70      0133 1           FACTOR_1: REF BLOCK[,BYTE],      ! dividend (packed dec by descriptor)
71      0134 1           FACTOR_2: REF BLOCK[,BYTE],      ! divisor (packed dec by descriptor)
72      0135 1           RESULT: REF BLOCK[,BYTE]        ! result (packed dec by descriptor)
73      0136 1           ): NOVALUE=
74
75      0137 1 ++
76      0138 1
77      0139 1
78      0140 1 FUNCTIONAL DESCRIPTION:
79      0141 1
80      0142 1 This routine supports RPG divides when precision and scale
81      0143 1 requirements call for precision > 31 decimal digits.
82      0144 1 It accepts as input packed decimal strings, and outputs a
83      0145 1 packed result.
84      0146 1
85      0147 1 CALLING SEQUENCE:
86      0148 1
87      0149 1 CALL RPG$DIV_LONG (factor_1.rp.ds, .factor_2.rp.ds, result.wp.ds)
88      0150 1
89      0151 1 FORMAL PARAMETERS:
90      0152 1
91      0153 1 FACTOR_1      address of descriptor of dividend for divide
92      0154 1 The allowable data type is packed.
93      0155 1
94      0156 1 FACTOR_2      address of descriptor of divisor for divide
95      0157 1 The allowable data type is packed.
96      0158 1
97      0159 1 RESULT        address of descriptor of result of the divide
98      0160 1 operation. The allowable data type is packed.
99      0161 1
100     0162 1 IMPLICIT INPUTS:
101     0163 1
102     0164 1
103     0165 1
104     0166 1 IMPLICIT OUTPUTS:
105     0167 1
106     0168 1
107     0169 1
108     0170 1 ROUTINE VALUE:
109     0171 1
110     0172 1
111     0173 1
112     0174 1 SIDE EFFECTS:
113     0175 1
114     0176 1
115     0177 1
116     0178 1 -- BEGIN
117     0179 2
118     0180 2
119     0181 2 LOCAL
120     0182 2           A,           ! additional precision needed
121     0183 2           C,           ! scale factor for dividend
122     0184 2           D,           ! scale-data for divide
123     0185 2           DIVIDEND : VECTOR[16,BYTE]; ! scaled dividend
124     0186 2
125     0187 2           Note: the variable names, A,C, and D were chosen to correspond to the
126     0188 2           PLI(OTS) documentation of the run-time routine. (See the Language Support
```

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126 0189 2 | Reference Manual.)
127 0190 2
128 0191 2
129 0192 2 calculate additional digits of precision required
130 0193 2 The sign of the scale which we use is the negative of the scale which the
131 0194 2 run-time routine is referring to, because of the way we store negative numbers.
132 0195 2
133 0196 2 A = .FACTOR_1[DSC$W_LENGTH] - .FACTOR_2[DSC$B_SCALE] - .RESULT[DSC$B_SCALE]
134 0197 2 + .FACTOR_1[DSC$B_SCALE] -31;
135 0198 2
136 0199 2
137 0200 2 |+ Get scale factor needed to make the dividend a 31 digit number.
138 0201 2 |-
139 0202 2 C = 31 - .FACTOR_1[DSC$W_LENGTH];
140 0203 2
141 0204 2 |+ Get the data scale
142 0205 2 |-
143 0206 2 D = 31 + .FACTOR_2[DSC$B_SCALE];
144 0207 2
145 0208 2
146 0209 2
147 0210 2 |+ Move from the packed dividend to temporary dividend scaling by 10**C
148 0211 2 |-
149 0212 2 ASHP(C, .FACTOR_1[DSC$W_LENGTH], .FACTOR_1[DSC$A_POINTER], %REF(0),
150 0213 2 %REF(31), "DIVIDEND");
151 0214 2
152 0215 2 OTSS$DIV_PKSHORT(DIVIDEND, .FACTOR_2[DSC$A_POINTER], .FACTOR_2[DSC$W_LENGTH],
153 0216 2 .RESULT[DSC$A_POINTER], .RESULT[DSC$W_LENGTH], .A, .D);
154 0217 2
155 0218 2 RETURN;
156 0219 1 END;

```

```

.TITLE RPG$DIVIDE
.IDENT \1-003\

.EXTRN OTSSDIV_PKSHORT

.PSECT _RPG$CODE,NOWRT, SHR, PIC.2

.ENTRY RPG$DIV_LONG, Save R2,R3,R4,R5,R6,R7 : 0132
SUBL2 #16, SP
MOVL FACTOR_1, R2
MOVL FACTOR_2, R5 : 0196
MOVZWL (R2), R0
CVTBL 8(R5), R1
SUBL2 R1, R0
MOVL RESULT, R4
CVTBL 8(R4), R3
SUBL2 R3, R0
CVTBL 8(R2), R1 : 0197
MOVAB -31(R1)[R0], A
MOVZWL (R2), C
SUBL3 C, #31, C : 0202
CVTBL 8(R5), D
ADDL2 #31, D : 0207
ASHP C, (R2), @4(R2), #0, #31, DIVIDEND : 0212

```

6E	1F	0003F		
	56	DD 00041	PUSHL	D
	57	DD 00043	PUSHL	A
7E	64	3C 00045	MOVZWL	(R4), -(SP)
	04	A4 DD 00048	PUSHL	4(R4)
7E	65	3C 0004B	MOVZWL	(R5), -(SP)
	04	A5 DD 0004E	PUSHL	4(R5)
00000000G 00	18	AE 9F 00051	PUSHAB	DIVIDEND
	07	FB 00054	CALLS	#7, OTSS\$DIV_PKSHORT
	04	0005B	RET	

: Routine Size: 92 bytes, Routine Base: \_RPG\$CODE + 0000

: 157 0220 1

RPG\$DIVIDE  
1-003

C 12  
16-Sep-1984 02:12:53  
14-Sep-1984 13:04:17 VAX-11 Bliss-32 V4.0-742  
[RPGRTL.SRC]RPGDIVIDE.B32:1

Page 6  
(3)

: 159 0221 1 END  
: 160 0222 0 ELUDOM

#### PSECT SUMMARY

Name	Bytes	Attributes
_RPGSCODE	92	NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

#### Library Statistics

File	-----	Symbols	-----	Pages	Processing
	Total	Loaded	Percent	Mapped	Time
-\$255\$DUA28:[SYSLIB]STARLET.L32:1	9776	3	0	581	00:01.0
-\$255\$DUA28:[RPGRTL.OBJ]RPGLIB.L32:1	54	0	0	9	00:00.1

#### COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:RPGDIVIDE/OBJ=OBJ\$:RPGDIVIDE MSRC\$:RPGDIVIDE/UPDATE=(ENH\$:RPGDIVIDE  
)

: Size: 92 code + 0 data bytes  
: Run Time: 00:04.2  
: Elapsed Time: 00:17.5  
: Lines/CPU Min: 3148  
: Lexemes/CPU-Min: 11063  
: Memory Used: 50 pages  
: Compilation Complete

0331 AH-BT13A-SE  
VAX/VMS V4.0

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